Amendments to the Claims

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims

1. – 23. (cancelled)

24. (currently amended) A method of identifying a test compound that modulates endoplasmic reticulum (ER) stress, the method comprising:

providing an ER stress model system;

optionally, increasing ER stress in the system;

contacting the system with a test compound; and

evaluating a level of Inositol Requiring 1 (IRE1) activity in the system by measuring a level of autophosphorylated IREl in the presence and absence of the test compound using an antibody that binds specifically to the autophosphorylated form of IRE1, wherein an increase in levels of the autophosphorylated form of IRE1 indicates an increase in the level of IRE1 activity and a decrease in levels of the autophosphorylated form of IRE1 indicates a decrease in the level of IRE1 activity,

wherein an increase in the level of IRE1 activity indicates that the test compound causes an increase in ER stress, and a decrease in the level of IRE1 activity indicates that the test compound causes a decrease in ER stress.

25. (original) The method of claim 24, wherein the ER stress model system is a cell or animal model of an ER stress disorder.

26. (original) The method of claim 24, wherein ER stress in the system is increased by contacting the system with an agent that increases levels of ER stress.

27. (original) The method of claim 26, wherein the agent that increases ER stress is thapsigargin or tunicamycin.

28. – 31. (cancelled)

32. (currently amended) The method of claim 24, further comprising:

selecting a test compound that decreases IRE1 activity;

contacting an ER stress model system with ~~a candidate~~ the test compound that ~~increases~~ decreases IRE1 ~~and/or HRD1~~ activity; and

evaluating ER stress in the system in the presence of the ~~candidate~~ test compound,

wherein a decrease in ER stress in the system in the presence of the ~~candidate~~ tet compound indicates that the ~~candidate~~ test compound is a candidate therapeutic ~~agent~~ compound for the treatment of an ER stress disorder.

33. (currently amended) The method of claim [[24]] 32, further comprising:

providing a model of an ER stress disorder;

optionally, increasing levels of ER stress in the model;

contacting the model with a candidate therapeutic agent for the treatment of an ER stress disorder identified by the method of claim [[33]] 32; and

evaluating the levels of ER stress in the system in the presence of the candidate compound,

wherein an improvement in the model in the presence of the candidate therapeutic agent indicates that the agent is a therapeutic agent for the treatment of an ER stress disorder.

34. (previously presented) The method of claim 24, wherein the compound or agent is a nucleic acid, polypeptide, peptide, or small molecule.

35. -46. (cancelled)

47. (withdrawn, currently amended) The method of claim [[21]] 33, wherein the ER stress disorder is diabetes.

48. (cancelled)

49. (new) The method of claim 24, wherein the antibody was generated by immunizing an animal with an antigen comprising a peptide having the amino acid sequence CVGRH[pS]FSRRSG (SEQ ID NO:20).